Control Number: 36928

Item Number: 109

Addendum StartPage: 0

PUC DOCKET NO. 36928
SOAH DOCKET NO. 473-09-4092

AEP TEXAS CENTRAL COMPANY'S	§	**PUBLIC UTILITY COMMISSION**
AND AEP TEXAS NORTH	§	
COMPANY'S REQUEST FOR	§	**OF TEXAS**
APPROVAL OF ADVANCED	§	
METERING SYSTEM (AMS)	§	
DEPLOYMENT PLAN AND	§	
REQUEST FOR AMS SURCHARGES	§	

ORDER

This Order addresses the requests of AEP Texas Central Company (TCC) and AEP Texas North Company (TNC) (collectively, AEP Texas) for approval of their individual advanced metering system (AMS) deployment plans and requests for AMS surcharges. TCC and TNC propose plans which provide for the full deployment of advanced meters by the end of the third quarter of 2013 to all residential and non-residential retail electric customers in the TCC and TNC service areas, except for those customers who are required to have interval data recorder (IDR) meters or take non-metered service. TCC and TNC also request approval of surcharges to recover costs associated with the deployment of the AMS. This docket was processed in accordance with applicable statutes and Public Utility Commission of Texas (Commission) rules.

AEP Texas, Commission Staff, the Office of Public Utility Counsel (OPC), the Steering Committees of Cities Served by TCC and TNC (Cities), Alliance for Retail Markets (ARM), CPL Retail Energy, LP & WTU Retail Energy, LP (CPL & WTU), Reliant Energy Retail Services, LLC (RERS), REPower LLC (REPower), TXU Energy Retail Company LLC (TXUE), and Texas Energy Association for Marketers (TEAM) (collectively, signatories) have entered into an unopposed stipulation resolving all issues in this docket. While not signing the stipulation, Texas Industrial Energy Consumers (TIEC) did not oppose the stipulation.

Under the stipulation, TCC and TNC were exempted from being "required to install advanced meters under the circumstances set forth in P.U.C. SUBST. R. 25.130(g)(6) in advance of the full deployment of advance meters in a given area."[1] The requested exemption was intended to provide that, until advanced meters were deployed in an area (as set forth by AEP Texas's deployment plan), AEP Texas would not be obligated to provide advanced meters as replacements for pre-existing automated-meter-reading meters in that area.[2]

The Commission finds the request that AEP Texas not be required to replace automated-meter-reading meters with advanced meters in advance of the full deployment of advance meters in a given area, as set forth in AEP Texas's deployment plan, to be reasonable. Therefore, the Commission approves this request. The Commission removes all references to P.U.C. SUBST. R. 25.130(g)(6), however, because AEP Texas's automated-meter-reading meters do not possess all the features necessary to trigger the replacement requirement in P.U.C. SUBST. R. 25.130(g)(6).

Furthermore, in those portions of this Order that address this request, the Commission adds explicit references to AEP Texas's deployment plan in order to provide greater clarity to the phrase "in a given area."

Another provision of the stipulation required AEP Texas to pursue funding for AMS available under the American Recovery and Reinvestment Act or under other similar federal enactments or programs under certain conditions. The stipulation further stated, "[t]he incremental cost of pursuing that funding *will be* included in the AMS surcharge."[3] The Commission will not pre-approve such recoveries in an AMS surcharge. The Commission makes clear (in finding of fact 63) the incremental cost of pursuing federal funding may be included in TCC's and TNC's AMS surcharges only after such cost has been reviewed for reasonableness and is approved by the Commission in a reconciliation proceeding pursuant to P.U.C. SUBST. R. 25.130(k)(6).

---

[1] Signatories' Stipulation and Motion for Implementation Thereof at Signatories' Proposed Order at 5 (Nov. 12, 2009).

[2] Open Meeting Tr. at 24-28 (Dec. 2, 2009).

[3] Signatories' Proposed Order at 15 (emphasis added).

Consistent with the stipulation, as modified by the Commission, TCC's and TNC's requests for approval of the AMS deployment plans and surcharges are approved.

The Commission adopts the following findings of fact and conclusions of law:

I. Findings of Fact

Procedural History

1. On April 20, 2009, AEP Texas filed a request for approval of AMS Deployment Plan and request for AMS surcharges. In the application, AEP Texas requested a waiver for certain retail customers and service types to include: (a) loads that may cause a safety or health issue if disconnected; (b) loads that do not require and will never require a home area network (HAN) device; (c) loads that currently have a poly-phase, class 200 (200-amp rating); and (d) loads that have poly-phase and instrument rated meters.[4]

2. The following parties intervened and were granted party status: ARM, Cities, CPL & WTU, OPC, TXUE, TEAM, TIEC, Reliant, and REPower.

3. On May 1, 2009, the Commission's Administrative Law Judge (ALJ) filed Order No. 2, approving TCC's and TNC's proposed notice and method of notice and set an intervention deadline.

4. On May 12, 2009, the Commission issued an Order of Referral which referred this proceeding to the State Office of Administrative Hearings (SOAH) to hold an evidentiary hearing on the merits and issue a proposal for decision.

5. On June 2, 2009, the Commission issued the Preliminary Order listing the issues that were to be addressed in this proceeding.

6. TCC and TNC provided notice of their application by: (a) providing direct notice to all retail electric providers (REPs) doing business in the State of Texas

[4] AEP Texas Central Company and AEP Texas North Company's Request for Approval of Advanced Metering System (AMS) Deployment Plan and Request for AMS Surcharges at Attachment B, pp. 1-2 (Apr. 20, 2009).

listed on the Commission's website as of April 20, 2009; (b) publishing notice once each week for four consecutive weeks in newspapers of general circulation in each of the counties in TCC's and TNC's service areas; and (c) providing direct notice to the parties to TCC's most recent base rate case, Docket No. 33309,[5] and TNC's most recent base rate case, Docket No. 33310.[6] In addition, TCC and TNC provided notification of their application to all municipalities in TCC's and TNC's service areas.

7. On June 10, 2009, AEP Texas filed their proof of notice. On June 11, 2009, TCC and TNC filed a supplemental proof of notice furnishing certain materials that were not available when the initial proof of notice was filed on June 10, 2009.

8. On June 17, 2009, the SOAH ALJ filed Order No. 6, establishing a procedural schedule to permit the parties to continue settlement discussions in this proceeding and in Docket No. 36924.[7] In addition, Order No. 6 found that TCC and TNC had substantially complied with the notice requirements established for this proceeding.

9. On November 12, 2009, a stipulation signed by the signatories was filed. The stipulation includes additional waivers related to functionality, and an amended statement of functionality and deployment plan.

AMS Deployment Plan

10. Subject to the conditions established in this Order, AEP Texas's AMS Deployment Plan, as revised on November 9, 2009, and attached as Exhibit A to this Order, complies with the requirements of P.U.C. SUBST. R. 25.130.

---

[5] *Application of AEP Texas Central Company for Authority to Change Rates*, Docket No. 33309, Order on Rehearing (Mar. 4, 2008).

[6] *Application of AEP Texas North Company for Authority to Changes Rates,* Docket No. 33310, Order (May 29, 2007).

[7] *Applications of AEP Texas North Company and AEP Texas Central Company to Implement a Mechanism to Address Trading Margins*, Docket No. 36924 (Dec. 11, 2009).

11. AEP Texas' Statement of AMS Functionality as revised on November 9, 2009, is attached as Exhibit B to this Order. Subject to the conditions established in this Order, TCC's and TNC's Statement of AMS Functionality (a) describes how TCC and TNC will implement the functionality requirements; and (b) complies with the requirements of P.U.C. Subst. R. 25.130.

12. Approval of AEP Texas' proposed AMS Deployment Plan will (a) increase the reliability of the regional electrical network; (b) encourage dynamic pricing and demand response; (c) improve the deployment and operation of generation, transmission, and distribution assets; and (d) provide more choices for electric customers.

13. AEP Texas' AMS Deployment Plan set forth in Exhibit A to this Order, including technology, functionalities, services, deployment, operations, maintenance, and cost recovery, is not unreasonably discriminatory, prejudicial, preferential, or anticompetitive. Parties had the right to address whether the AMS Deployment Plan was unreasonably discriminatory, prejudicial, preferential, or anticompetitive.

14. Under the AMS Deployment Plan, TCC and TNC will not be providing any service that is a competitive energy service under P.U.C. SUBST. R. 25.343.

15. In any proceeding referenced in the stipulation, all parties may fully participate as parties.

Waivers

16. In the event of a base rate case during the AMS deployment period ending December 2013, TCC and TNC have requested that the costs being recovered through the AMS surcharges remain in the surcharges, rather than moving the cost of installed AMS equipment into base rates and decreasing the surcharges, as required by P.U.C. SUBST. R. 25.130(k)(4). AEP Texas' request to waive this requirement is reasonable.

17. AEP Texas has requested waivers permitting TCC and TNC not to install an advanced meter with all functionalities required by P.U.C. SUBST. R. 25.130(g)(1) in four specific circumstances.

A. Loads that have met and are registered as critical loads under the Commission's rules and may cause a safety or health issue if disconnected, such as traffic lights, metered street lights, railroad crossings, hospital facilities, police stations, service points providing cathodic protection, and AEP Texas' emergency facilities, will not be required to have disconnect functionality.

B. Loads that do not require and will never require a HAN device, such as traffic lights and metered street lights, and other applications that would not benefit from a HAN device, such as electric gates, communication power supplies, sprinkler controls, and cathodic protection power supplies, will not be required to have a HAN device installed.

C. Loads that currently have poly-phase, class 200 (200 amp rating) meters, which includes commercial customers and some residential customers, will not have a service switch until a poly-phase meter with those devices becomes available in the market.

D. Loads that have poly-phase and instrument rated meters will not have a HAN device until those meters with HAN devices become available in the market.

18. AEP Texas seeks a waiver from P.U.C. SUBST. R. 25.130(g)(1)(E)(i) and (G) if and only to the extent those rules require real-time access to data for end-use customers. End-use customers will not have access to data through a web portal unless and until (a) provided by their retail electric provider (REP); or (b) the Texas common data repository (hereinafter, common repository) and Texas common web portal (hereinafter, common portal) are in place pursuant to Project

No. 34610.[8] Once the common portal is completed, customers (in addition to REPs and authorized third parties) will have secure access to data through the common portal.

19. TCC and TNC request that they not be required to install advanced meters in advance of the full deployment of advanced meters in a given area, as set forth in AEP Texas's AMS Deployment Plan that is attached to this Order as Exhibit A. This request is reasonable.

AMS Surcharges

20. AEP Texas' AMS surcharge models are a reasonable method for calculating appropriate AMS surcharges and reflect an appropriate methodology for calculating the AMS surcharge amounts.

21. AEP Texas' adaptation of the McKinsey model, whereby the Companies converted it from a cost-benefit model to a revenue requirement model and added a calculation to determine the AMS surcharges, is reasonable.

22. The estimated costs identified by TCC and TNC in their AMS surcharge models are associated with the proposed AMS deployment to residential customers and nonresidential customers, other than those required by ERCOT to have an interval data recorder meter, or take non-metered service, are reasonable estimates. Those costs include, but are not limited to: (a) advanced meter costs; (b) costs of communications technologies; (c) costs of back-office systems; (d) AEP Texas' share of the costs of the common repository and common portal; (e) operation and maintenance expenses; (f) applicable taxes; (g) customer education costs; (h) costs of in-home monitors for low-income customers; (i) AEP Texas' share of the fees for the participation of Solutions Cube Group, LLC in Project No. 34610; (j) travel-related expenses for AEP Texas' participation in Project No. 34610; (k) severance costs related to meter readers and installers; and (1) rate-case expenses. These costs reflect the signatories' agreement set forth in the stipulation and should be recovered through TCC's and TNC's proposed AMS surcharge to the

[8] *Implementation Project Relating to Advanced Metering,* Project No. 34610 (pending).

extent the actual costs are reasonable and necessary and until such time as these costs are included in base rates. These costs are subject to review in a reconciliation proceeding pursuant to P.U.C. SUBST. R. 25.130 (k)(6).

23. TCC and TNC have agreed that the meter installation costs recovered through the surcharge will be reduced by 25% to reflect the portion of the installation costs that should be allocated to cost of removal for the old meters. The cost of removal of the old meters will be charged to accumulated depreciation of the old meters, independent of the AMS surcharge.

24. The costs of the communication systems for the AMS deployment in the rural areas of TCC's and TNC's service territories included in the surcharge models implementing the stipulation have been reduced from the costs reflected in the initial filing. The actual costs of the communications systems in the rural areas will be recovered through TCC and TNC's AMS surcharges to the extent the actual costs are reasonable and necessary. These costs are subject to review in a reconciliation proceeding pursuant to P.U.C. SUBST. R. 25.130(k)(6).

25. The estimated costs identified by TCC and TNC in their AMS surcharge models are reasonably based on the functionality described in Exhibit B to this Order and do not account for the resolution of the constraints described in Exhibit B or any additional functionality required by Project No. 34610 or similar, related proceedings. Should resolution of the constraints described in Exhibit B or provision of additional functionality be required by Project No. 34610 or any similar, related proceeding, AEP Texas will resolve such constraints or provide such additional functionality as and to the extent the means to do so are commercially available. In the event the means to resolve such constraints or provide such functionality are not commercially available, AEP Texas will use reasonable efforts to develop or encourage the development of such means. The actual costs of adding any such functionality or resolution of identified constraints will be recovered through TCC's and TNC's AMS surcharges to the extent the actual costs are reasonable and necessary, subject to the limitation on costs related to providing C12.22 functionality discussed in finding of fact 44 below. These

costs are subject to review in a reconciliation proceeding pursuant to P.U.C. SUBST. R. 25.130(k)(6).

26. AEP Texas' total estimated capital investment for advanced metering facilities of $269.71 million ($211.71 million for TCC and $58.00 million for TNC), as set forth in Exhibit C to this Order, is a reasonable estimate of investment that is necessary for the provision of advanced metering to approximately one million retail customers in TCC and TNC's service areas and is to be recovered through TCC and TNC's AMS surcharges to the extent the actual investment is reasonable and necessary. These costs are subject to review in a reconciliation proceeding pursuant to P.U.C. SUBST. R. 25.130(k)(6).

27. AEP Texas' total estimated operating and maintenance expenses of $159.77 million ($124.27 million for TCC and $35.50 million for TNC) for the surcharge period, starting January 2010 through December 2020, including the amounts through December 2009 set forth in Exhibit C to this Order, are reasonable estimates of expenses that are necessary for the provision of advanced metering to approximately one million retail customers in TCC's and TNC's service areas and are to be recovered through TCC's and TNC's AMS surcharges to the extent the actual expenses are reasonable and necessary. These costs are subject to review in a reconciliation proceeding pursuant to P.U.C. SUBST. R. 25.130(k)(6).

28. AEP Texas' estimated savings and benefits for the surcharge period are $121.76 million, consisting of $114.54 million ($83.55 million for TCC and $30.99 million for TNC) in meter reading savings and $7.22 million ($5.65 million for TCC and $1.57 million for TNC) in ad valorem tax savings as set forth in Exhibit D to this Order, are reasonable estimates. These savings and benefits are subject to reconciliation pursuant to P.U.C. SUBST. R 25.130(k)(6).

29. TCC's total estimated revenue requirement of $291.708 million, which reflects the application as a reduction to rate base underlying the AMS surcharges of $21.21 million in System Integration Agreement (SIA) refunds for TCC's AMS-eligible customers pursuant to the final order in Docket No. 36924, is reasonable and is to

be recovered through the AMS surcharge approved in this Order, and is subject to reconciliation pursuant to P.U.C. SUBST. R. 25.130(k)(6).

30. TNC's total estimated revenue requirement of $68.40 million, which reflects the application as a reduction to rate base underlying the AMS surcharges of $8.54 million in SIA refunds for TNC's AMS eligible customers pursuant to the final order in Docket No. 36924, is reasonable and is to be recovered through the AMS surcharges approved in this Order subject to reconciliation pursuant to P.U.C. SUBST. R. 25.130(k)(6).

31. Amortization of the SIA refunds will begin in year five of the surcharges and will continue over the remaining seven years of the eleven year surcharge period. Amortization will occur equally over the seven year time period.

32. The seven-year depreciation period utilized for the meter investment in AEP Texas' AMS surcharge models is reasonable.

33. The surcharge methodology proposed by AEP Texas, as modified by the stipulation, is reasonable and necessary.

34. TCC's proposed "Rider AMSCRF – Advanced Metering System Cost Recovery Factor," which is attached to this Order as Exhibit E, is reasonable and shall be effective on December 30, 2009, the beginning of TCC's January 2010 billing month. The monthly nonbypassable AMS surcharges reflected on Rider AMSCRF listed below are based on the revenue requirement from AEP Texas' AMS surcharge model, which reflects the application of $21.21 million in SIA refunds as a reduction to the surcharges assessed to TCC's AMS eligible customers pursuant to the final order in Docket No. 36924, are reasonable and necessary.

	Monthly Fees For Billings Rendered		
	Billing Periods:	Billing Periods:	Billing Periods:
Rate Schedule	January 2010 - December 2011	January 2012 - December 2013	January 2014 - December 2020
Residential Service	$3.15	$2.89	$2.26
Secondary Service Less Than or Equal to 10 kW	$4.17	$4.17	$4.17
Secondary Service Greater Than 10 kW Non-TDR	$2.05	$2.05	$2.05
Primary Service Non-DR	$(7.07)	$(7.07)	$(7.07)

35. TNC's proposed "Rider AMSCRF – Advanced Metering System Cost Recovery Factor," which is attached to this Order as Exhibit F, is reasonable and shall be effective on December 30, 2009, the beginning of TNC's January 2010 billing month. The monthly nonbypassable AMS surcharges reflected on Rider AMSCRF listed below are based on the revenue requirement from AEP Texas' AMS surcharge model, which reflects the application of $8.54 million in SIA refunds as a reduction to the surcharges assessed to TNC's AMS eligible customers pursuant to the final order in Docket No. 36924, are reasonable and necessary.

	Monthly Fees For Billings Rendered		
	Billing Periods:	Billing Periods:	Billing Periods:
Rate Schedule	January 2010 - December 2011	January 2012 - December 2013	January 2014 - December 2020
Residential Service	$3.15	$2.77	$2.35
Secondary Service Less Than or Equal to 10 kW	$4.40	$4.40	$4.40
Secondary Service Greater Than 10 kW Non-TDR	$1.46	$1.46	$1.46
Primary Service Non-DR	$0.22	$0.22	$0.22

36. AEP Texas estimates that 149 meter reader, 87 meter specialist, 10 supervisor, and two manager positions will be affected as a result of deployment of AMS. AEP Texas shall attempt to lower actual severance costs by allowing employees whose positions are eliminated to seek other positions within TCC and TNC, and any such savings will be taken into account during the reconciliation proceeding required by the Stipulation and P.U.C. SUBST. R. 25. 130(k)(6).

37. AEP Texas shall reduce the AMS revenue requirements of TCC and TNC to reflect the savings related to reduced pension and post-retirement benefits other than pensions arising from the termination of meter personnel based on a labor loading factor. The labor loading factor for these items will be based on amounts determined in accordance with application of Statement of Financial Accounting Standards (SFAS) Nos. 87 and 106. These savings and benefits are subject to reconciliation pursuant to P.U.C. SUBST. R. 25.130(k)(6).

38. If TCC and TNC have not filed a base-rate case by December 31, 2011, then AEP Texas shall file an AMS reconciliation proceeding under P.U.C. SUBST. R. 25.130(k)(6) in March 2012.

39. TCC and TNC shall begin charging their approved surcharges as of December 30, 2009, the beginning of the January 2010 billing month, provided that: (a) not less than 30 days notification has been given to the REPs pursuant to Finding of Fact No. 92 below. The surcharges shall end on the last day of the 132nd month thereafter; provided, however, that the ending date shall be subject to change based on the results of any proceeding to adjust the AMS surcharges or a reconciliation proceeding under P.U.C. SUBST. R. 25.130(k)(6) or inclusion of AMS costs in base rates.

40. AEP Texas will track and record AMS revenues and related AMS costs and track AMS savings in a manner that will readily allow for the identification, tracking, and reporting of these amounts on a monthly basis.

Meters, Communications Networks, and Back-Office Systems

41. The terms, including pricing, of the contract with Landis+Gyr, relating to the deployment of advanced meters and communication technology, are reasonable. To the extent TCC and/or TNC subsequently contract for a different meter or communications system for any portions of their service areas, they will provide to the Commission the executed contract(s) with the vendor within 30 days of its execution in a manner that is consistent with the terms of the Protective Order in this proceeding.

42. The AMS technologies are reasonable and prudent technology choices for use in AEP Texas' deployment plan.

43. The AMS technology will utilize on-board meter storage of meter data that complies with current American National Standards Institute (ANSI) C12.19-2008 Standard. The AMS technology will use the C12.19 tables consistent with the current AEIC C12.19 guidelines. AEP Texas will report on its plans to comply when the AEIC C12.19 Version 2.0 guidelines are adopted.

44. AEP Texas' AMS shall utilize open standards and protocols that comply with nationally recognized standards for the transport of ANSI C12.19 table data over networked connections.

    A. No later than the fourth (4th) quarter of 2010, TCC and TNC will implement a firm-ware upgrade that will incorporate ANSI C12.22 functionality end-to-end.

    B. Prior to the installation of the firm-ware upgrade described in subparagraph A, TCC and TNC will convene a technical conference for the parties to review developments related to implementation of the ANSI C12.22 protocol to allow the transport of ANSI C12.19 table data over networked connections.

    C. Increased costs incurred by TCC and TNC to incorporate ANSI C12.22 functionality end-to-end are eligible for recovery through TCC's and TNC's AMS surcharges to the extent these costs are reasonable and

necessary, but in no event will the associated costs included in the AMS surcharges exceed $11.2 million in capital expenditures and $3.9 million in O&M expense. These costs are subject to review in a reconciliation proceeding pursuant to P.U.C. SUBST. R. 25.130(k)(6).

45. AEP Texas' advanced meters satisfy the requirements of P.U.C. SUBST. R. 25.130(g), and no non-compliant AMS meters will be installed during the deployment period, unless those meters are installed consistent with a waiver described in the stipulation and approved by the Commission.

46. Beginning 30 days following the conclusion of the month in which meter installation begins, AEP Texas shall identify in the monthly progress reports required under P.U.C. SUBST. R. 25.130(d)(9) the ESI-IDs with advanced meters installed pursuant to the deployment plan attached as Exhibit A to this Order. The requirements governing the information that AEP Texas may make available to all REPs shall follow the guidelines developed in Project No. 34610.

47. With installation and overhead costs included, the average estimated cost for the residential advanced meters, included in the surcharge models, are $161.65 for TCC and $176.76 for TNC. The average estimated cost for the non-residential advanced meters, included in the surcharge models, is $285.85 for TCC and $313.70 for TNC. The average costs listed above are based on (a) meter unit prices; (b) remote connect/disconnect adders where applicable; (c) freight charges; (d) project engagement management services; (e) installation costs; (f) applicable sales taxes; and (g) the quantity AEP Texas expects to install of each meter model.

48. In AEP Texas' monthly progress reports required under P.U.C. SUBST. R. 25.130(d)(9), beginning with January 2010, TCC and TNC shall list the ESI-IDs with advanced meters and whether the meters are provisioned and use RF mesh or some other communications system. The requirements governing the information that AEP Texas makes available to all REPs shall follow the guidelines determined in Project No. 34610.

49. AEP Texas shall provide records of advanced meter failure and repair rates and costs incurred as a result of those failures and repairs, net of warranty payments, if any, in the monthly progress reports required under P.U.C. SUBST. R. 25.130(d)(9).

50. AEP Texas will be able to support prepaid service (consistent with P.U.C. SUBST. R. 25.498) for customers with AMS provisioned meters with remote connect/disconnect capability no later than April 30, 2010. AEP Texas shall include information related to the status of achieving this commitment in its monthly progress reports to the Commission.

51. Pursuant to P.U.C. SUBST. R. 25.498(h)(4), AEP Texas shall reconnect power to a customer with prepaid service, after disconnection of service at the meter, within one hour of receiving notice from the customer's REP through a standard market transaction (*i.e.*, TexSET) requesting that the customer's power be reconnected if the customer has an AMS provisioned meter with remote disconnect/reconnect capability.

52. AEP Texas shall provide or support all of the functionality described in Exhibit B to this Order, in accordance with its terms.

53. The design and cost of AEP Texas' web portal functionality is dependent on the successful deployment of a common portal for access and common repository for 15-minute settlement.

Regulatory Assets/Liabilities

54. AEP Texas shall establish one or more reasonable regulatory asset or liability accounts in which will be recorded at least annually the difference between the AMS surcharge revenues and the net revenue requirements for the period, based on actual expenses and net investment in AMS.

55. Interest will accrue on the balance in the regulatory asset/liability account net of Accumulated Deferred Income Taxes (ADIT) based on TCC's and TNC's pretax cost of capital. This interest rate shall be adjusted if TCC and/or TNC's cost of capital is adjusted in a future rate case.

56. The plant balance and accumulated depreciation will not be reduced as the old meters are retired. However, any net salvage value, including the 25% of meter installation costs categorized as cost of removal, will be charged to/credited to accumulated depreciation of the old meters, independent of the AMS surcharges.

57. The cost of the existing meters to be replaced and their proportional share of the accumulated depreciation can be determined and AEP Texas shall put those costs into separate sub-accounts or identify them in another appropriate manner within the property accounting system so that they can be easily tracked.

58. The plant balance of the old meters described in the preceding finding of fact 57, shall be amortized by TCC and TNC until the accumulated depreciation of the old meters is equal to the plant balance of the old meters. The amortization rate will be the current approved depreciation rates of 5.56% for TCC and 3.49% for TNC. In the event these rates change as a result of a general rate case, these amortization rates will be updated to reflect the new Commission-authorized rates. The net plant balance will be included in TCC and TNC's rate base while the amortization expense will be included in cost of service for determining base rates. In a subsequent base rate proceeding, parties retain all rights with respect to: (a) the treatment pursuant to P.U.C. SUBST. R. 25.130(k)(4) of the costs associated with the old meters included in the unamortized balance; and (b) the reasonable amount of the costs associated with the old meters included in the unamortized balance.

59. AEP Texas shall recover in the surcharges costs associated with this AMS proceeding, costs of the customer education program, employee severance costs, and costs of participation in Project No. 34610, subject to reconciliation pursuant to P.U.C. SUBST. R. 25.130(k)(6).

60. In calculating the AMS surcharge, AEP Texas has not offset the estimated savings and benefits to be generated by its AMS deployment plan with any lost revenues that might also be generated by its AMS deployment plan.

61. In future base-rate or AMS reconciliation proceedings, AEP Texas will not seek to recover amounts intended to recoup past revenue reductions generated by the AMS deployment plan (*i.e.*, through increased customer energy efficiency). AEP Texas shall include in base-rate cases and other future filings accurate billing determinants that reflect actual consumption during the period applicable to such filing.

Return on Equity and Cost of Debt

62. A return on equity (ROE) of 9.96% and a cost of debt of 5.8586% approved in Docket No. 33309 for TCC and an ROE of 9.96% and cost of debt of 5.79% approved in Docket No. 33310 for TNC together with the approved capital structure shall be used in the calculation of their respective AMS surcharges. A subsequent adjustment to TCC's AMS surcharge factors shall be made at the time of the entry of any Commission final order reflecting a new Commission-authorized ROE and cost of debt for TCC. A subsequent adjustment to TNC's AMS surcharge factors shall be made at the time of the entry of any Commission final order reflecting a new Commission-authorized ROE and cost of debt for TNC.

Potential Federal Funding

63. AEP Texas shall pursue funding for AMS available under the American Recovery and Reinvestment Act or under other similar federal enactments or programs if TCC and TNC are eligible for that funding and funds have been appropriated under the federal government's requirements. The incremental cost of pursuing that funding may be included in the AMS surcharge if approved by the Commission in a reconciliation proceeding pursuant to P.U.C. SUBST. R. 25.130(k)(6). If after the applicable federal governmental requirements under a particular federal enactment or program are known, it appears that the costs of seeking funding would be greater than the potential benefit to obtain such funding, then AEP Texas shall not seek the funding. The incremental costs to pursue the funding must be reasonable and necessary and are

subject to reconciliation pursuant to P.U.C. SUBST. R. 25.130(k)(6). AEP Texas agrees to include information about the status of its efforts pursuant to this commitment in its monthly progress reports to the Commission. In the event TCC and TNC actually receive a grant of federal funds, they shall make a timely filing with the Commission for the funds to be appropriately reflected in the AMS surcharges.

Customer Education

64. AEP Texas shall conduct a customer education program in accordance with Exhibit G to this Order.

65. It is reasonable for AEP Texas to spend and to include in the AMS surcharge a total of $1.2 million in capital costs ($960,000 for TCC and $240,000 for TNC) and $3.8 million in O&M costs ($3.04 million for TCC and $0.76 million for TNC) to pay for the costs associated with the customer education proposed by AEP Texas in Exhibit G to the Order. These costs are subject to review in a reconciliation proceeding pursuant to P.U.C. SUBST. R. 25.130 (k)(6). Exhibit G is intended to be representative of the types of activities and the estimated costs of those activities that will be undertaken in educating customers about advanced meters and is not intended to specify the exact activities to be undertaken or to specify the exact amounts to be spent on each activity.

66. AEP Texas shall report on its customer education efforts quarterly. Those reports shall be filed at the Commission until AMS deployment is complete.

Discretionary Service Charges

67. It is appropriate that all customers in the TCC and TNC service areas benefit, as rapidly as possible, from the impact of the cost savings that result from the deployment of advanced meters on TCC's and TNC's meter-related discretionary service charges. These meter-related discretionary service charges include: (a) the move-in connection charges (6.1.2.1.1 and 6.1.2.1.2); (b) the disconnect for non-pay charge (DNP) (6.1.2.1.5); (c) the reconnect after DNP (6.1.2.1.6); (d) the meter re-read charge (6.1.2.1.8); and (e) the out-of-cycle meter read for purpose

of a switch charge (6.1.2.1.9). It is reasonable to require TCC and TNC to seek Commission approval of annual reductions in these meter-related discretionary service charges over a period of five years to reflect the progressive reduction in costs resulting from AMS deployment.

68. TCC and TNC shall file respective applications to implement these new discretionary service charges no later than September 30 in each year of the five-year period, beginning with September 30, 2010. Each application shall seek to annually update and reduce the new discretionary charges affected by AMS deployment to reflect the then-current mix of AMS and non-AMS meters on the TCC system and TNC system, respectively. Such a yearly update mechanism will reasonably capture the cost savings associated with the deployment of advanced metering and provide customers with the cost savings that should result from the use of advanced metering technology. It is reasonable for the Commission and all other regulatory authorities to review and, if appropriate, to approve the new discretionary charges on an annual basis for these reasons.

69. Each meter-related discretionary service charge for fully functional AMS meters established for the fifth year following full deployment shall be no higher than the incremental cost of providing the discretionary service. In the next general rate case for TCC and TNC, respectively, each shall seek to adjust their discretionary service charges in a manner that will allow them to request approval of charges that are no higher than the incremental cost of providing the discretionary service. The discretionary service charges established for fully functional AMS meters in the fifth year shall be no higher than $1.50. Nothing in this Order precludes a party from requesting a reduction in one or more of these meter-related discretionary service charges in a future Commission proceeding. For purposes of the provisions of this Stipulation addressing the reduction in discretionary services fees to reflect the cost savings resulting from AMS deployment and the installation of advanced meters at customers' premises, a "fully functional AMS meter" is one that utilizes two-way communications to obtain meter reading data

and has a functioning service switch that allows the meter to be remotely connected or disconnected *via* communication over the AMS network.

Web Portal

70. AEP Texas, together with the other TDUs, will continue to support independent, third party security audits of the common AMS web portal requirements as the development of the common portal continues and will provide the results of that audit to the Commission. In addition, AEP Texas will include information about the status of the audits in its monthly progress reports to the Commission.

71. Taken together, the AEP Texas Interim REP Portal, the common repository, and the common portal meet the functionality requirements of P.U.C. SUBST. R. 25.130(g)(1), as modified by any waivers granted to AEP Texas, and are reasonable.

72. The web portal assumptions determined in Project No. 34610 and reflected in Exhibit H-1 (pages 1-3) and H-2 (pages 1-2) to this Order are the assumptions that will form the basis of the common portal.

73. The web portal business requirements determined in Project No. 34610 and reflected in Exhibit H-3 (pages 1-10) to this Order are the business requirements with which the common portal will comply.

74. The estimated capital costs and estimated annual operation and maintenance costs included in AEP Texas' AMS surcharge to develop, implement, operate, and maintain the common portal are reasonable. Such costs will be subject to reconciliation pursuant to P.U.C. SUBST. R. 25.130(k)(6).

75. AEP Texas' AMS surcharge models include $4.4 million in estimated costs for administering its share of the common repository and portal (including AEP Texas' share of a web portal audit) during the first four years of the surcharge period. Should the Electric Reliability Council of Texas, Inc. (ERCOT) not assume the administration of the common web portal and repository following the four-year period and/or the costs of administering the common web portal and repository are not then recovered through the ERCOT fees to market participants,

the Signatories acknowledge that the costs that AEP Texas continues to bear in connection with administration of the of the common web portal and repository will be recovered through TCC's and TNC's AMS surcharges to the extent the costs are reasonable and necessary. The costs of administration of the common web portal and repository are subject to review in a reconciliation proceeding pursuant to P.U.C. SUBST. R. 25.130(k)(6).

AMIT Facilitation

76. AEP Texas will act as the lead utility to retain Solutions Cube Group to conduct workshops of the Advanced Metering Implementation Team (AMIT) related to the capability of AMS to potentially enhance aspects of the electric system and market. It is reasonable for AEP Texas to expend up to $250,000 to retain the facilitator for the AMIT purposes. The costs of retaining the facilitator for these purposes will be recovered through TCC's and TNC's AMS surcharges. These costs are subject to review in a reconciliation proceeding pursuant to P.U.C. SUBST. R. 25.130(k)(6).

Low-Income In-Home Monitors

77. AEP Texas shall include $1 million ($800,000 for TCC and $200,000 for TNC) in the AMS surcharge to cover the costs of (a) providing in-home monitors to low-income customers; (b) the associated administrative costs; and (c) the costs of distribution, training and customer education related to in-home monitors. It is appropriate and reasonable for AEP Texas to expend an initial amount of $1 million ($800,000 for TCC and $200,000 for TNC), to cover the costs of providing in-home monitors to low-income customers over the deployment period, and TCC and TNC shall make such expenditures. The expenditures for such low income in-home energy monitors will be recovered through TCC's and TNC's AMS surcharges. AEP Texas shall provide semiannual reports regarding the cost of the monitors and the deployment of such monitors. AEP Texas further agrees to consult and work with Staff, OPC, and any other interested parties to utilize the experience gained from the program for providing in-home energy

monitors to low-income customers to develop feasible and economical additional programs with the objective of more widely making in-home energy monitors available to as many eligible low-income customers as reasonably possible. AEP Texas may seek the additional costs reasonably and necessarily expended on these additional activities through TCC's and TNC's AMS surcharges. These costs are subject to review in a reconciliation proceeding pursuant to P.U.C. SUBST. R. 25.130(k)(6). These amounts for the low-income in-home energy monitors will be incurred by TCC and TNC in addition to the costs for such in-home monitors recovered by TCC and TNC through the energy efficiency cost recovery factor (EECRF) under P.U.C. SUBST. R. 25.181.

78. AEP Texas will coordinate with the other TDUs in the selection of an in-home device(s) for distribution to low-income customers. Following the filing of this Order, a project will be established and a series of workshops will be held if needed, to reach a consensus to design and implement the low-income provisions of the Order. Under Staff leadership, the group will use its best efforts to finalize the plan within two years after the filing of this Order. The goal of the program is to maximize the comprehensive, cost-effective distribution of the in-home devices, including training and education, to the greatest number of eligible low-income customers. It is anticipated that a variety of distribution channels and methods may be used, including but not limited to government agencies, community action agencies, and retail electric providers so long as any particular distribution channel or method achieves the goal. If parties are not able to reach agreement on the plan, the matter will be brought to the Commission for resolution in the project that has been established.

79. AEP Texas agrees to include information about the implementation of this program in its monthly progress reports to the Commission.

80. For purposes of this commitment, the definition of "low-income customer" in P.U.C. SUBST. R. 25.5 shall apply.

81. All in-home monitors provided to eligible low-income customers pursuant to this low-income program will be compatible with AEP Texas' AMS meters. If in-home monitors are provided pursuant to this low-income program by any third-party entity other than AEP Texas, it will be that entity's responsibility to ensure that the monitor is compatible with the ZigBee communication module in AEP Texas' AMS meters.

82. The program will require the in-home monitors be provided equitably across the entire TCC and TNC service areas.

Home Area Network

83. AEP Texas shall reflect any HAN requirements agreed to in Project No. 34610 in a compliance tariff.

Settlement at ERCOT

84. AEP Texas' AMS will be able to support 15-minute settlement at ERCOT, for both the interim and long-term settlement solutions identified in Project No. 34610.

Reporting

85. AEP Texas shall file the reports identified on Exhibit I to this Order in a compliance project, and those reports will be available to all parties in this proceeding. AEP Texas will follow the applicable rules governing the protection of confidential, highly sensitive, and customer proprietary information.

86. Within one year after deployment begins, in conjunction with Commission Staff, AEP Texas will select and engage an independent security auditor to audit AEP Texas' mechanism(s) for customer and REP access to meter data and will report the results of such audit in a compliance project. This audit shall be comprehensive, and shall trace the flow of data from the end-point back to AEP Texas' head-end system. Subsequent annual audits shall be conducted and the results of such audits reported to the Commission. The costs of performing the audit will be recovered through TCC's and TNC's AMS surcharges. These costs

are subject to review in a reconciliation proceeding pursuant to P.U.C. SUBST. R. 25.130(k)(6).

Adjustment and Recovery of Costs

87. The size, novelty, complexity, and duration of AEP Texas' AMS deployment plan, and other causes beyond AEP Texas' reasonable control, make it impossible to precisely estimate the final reasonable and necessary cost of AEP Texas' AMS deployment plan. As a result, adjustments to the estimated costs stated in this Order will be necessary in the future. In accordance with P.U.C. SUBST. R. 25.130(k), TCC and TNC will be allowed the opportunity to recover, through the surcharge and base rates, all of its AMS costs, including such costs that are more than what is estimated in this Order, to the extent TCC and TNC prove that those costs were spent, properly allocated, reasonable and necessary, and reduced by the net operating cost savings resulting from TCC's and TNC's AMS.

Reconciliation Proceeding

88. If TCC and TNC have not filed a base-rate case by December 31, 2011, then AEP Texas shall file an AMS reconciliation proceeding under P.U.C. SUBST. R. 25.130(k)(6) in March 2012, unless AEP Texas wishes to update the AMS surcharges before that time pursuant to P.U.C. SUBST. R. 25.130(k)(5). In addition, the reconciliation proceeding conducted pursuant to this provision will not be treated as a reconciliation proceeding initiated by AEP Texas for purposes of determining when the companies can initiate another reconciliation proceeding under P.U.C. SUBST. R. 25.130(k)(6). In other words, AEP Texas can seek reconciliation within three years after the initiation of the reconciliation proceeding required by this provision.

Rate Case Expenses

89. Rate case expense amounts set forth below include amounts incurred through the end of September 2009, and estimated amounts for the remainder of the proceeding.

90. AEP Texas has reasonable actual rate case expenses of $356,847 and estimated rate case expenses of $95,000.

91. Cities have reasonable actual rate-case expenses of $84,115.81 and estimated rate case expenses of $20,000 for Docket Nos. 36928 and 36924.

REP Notice

92. AEP Texas agrees to provide electronic written notice to the REPs who are authorized to provide service in TCC's and TNC's service areas, no later than 30 days prior to implementation of a surcharge consistent with this Order that includes the following information: (a) the surcharges under the Stipulation; (b) the billing cycle in which TCC and TNC will begin assessing those surcharges to REPs; and (c) all applicable 810-02 transaction information. AEP Texas agrees to use MSCO39 (code designated by ERCOT as Advanced Metering System Cost Recovery Factor) for the SAC04 code for the AMS surcharge. AEP Texas agrees to hold one or more meetings and/or conference calls for REPs to ask questions regarding the implementation.

Informal Disposition

93. Pursuant to P.U.C. PROC. R. 22.5(b), good cause exists to waive the requirements of P.U.C. PROC. R. 22.35(b)(2), so that this docket may be considered at the Commission's open meeting scheduled for December 2, 2009, to avoid any undue delay in the deployment of advanced meters, consistent with PURA § 39.107(i), which supports deploying advanced metering "as rapidly as possible to allow customers to better manage energy use and control costs, and to facilitate demand response initiatives."

II. Conclusions of Law

1. TCC and TNC are each an electric utility as that term is defined in § 31.002(6) of the Public Utility Regulatory Act, TEX. UTIL. CODE ANN. §§ 11.001 – 66.016 (Vernon 2007 & Supp. 2009) (PURA).

2. The Commission has jurisdiction over this proceeding pursuant to PURA § 39.107(h).

3. AEP Texas' provision of notice in this proceeding complies with P.U.C. PROC. R. 22.55.

4. AEP Texas' application was processed in accordance with the requirements of PURA and the Administrative Procedure Act, TEX. GOV'T CODE ANN. §§ 2001.001 *et seq.* (Vernon 2008 & Supp. 2009).

5. The Commission's consideration of the stipulation complies with PURA § 14.054 and P.U.C. PROC. R. 22.206.

6. The terms of the stipulation are supported by a preponderance of the evidence and, except for those requests addressed in this Order for which the Commission has found good cause to grant waivers, comply with the requirements of P.U.C. SUBST. R. 25.130.

7. The stipulation, taken as a whole, is a fair, just, and reasonable resolution of all issues presented, is supported by the record, and is consistent with the relevant provisions of PURA, and is in the public interest.

8. AEP Texas' requests for waivers pursuant to P.U.C. SUBST. R. 25.130(g)(3) are reasonable.

9. TCC's and TNC's request that they not be required to install advanced meters in advance of the full deployment of advanced meters in a given area, as set forth in AEP Texas's AMS deployment plan that is attached to this Order as Exhibit A, is reasonable. TCC's and TNC's requests for waiver of the requirements in P.U.C. SUBST. R. 25.130(k)(4) are reasonable.

10. The surcharge methodology proposed by AEP Texas is reasonable and consistent with P.U.C. SUBST. R. 25.130(k)(3).

11. It is reasonable for AEP Texas to spend and to include in the AMS surcharge a total of $1.2 million in capital costs ($960,000 for TCC and $240,000 for TNC) and $3.8 million in O&M costs ($3.04 million for TCC and $0.76 million for TNC) for customer education. These costs are subject to review in a reconciliation proceeding pursuant to P.U.C. SUBST. R. 25.130(k)(6).

12. The requirements for informal disposition in P.U.C. PROC. R. 22.35 have been met in this proceeding except for subsection (b)(2) that requires the proposed order to be served on all parties no later than 20 days before the Commission is scheduled to consider the petition in an open meeting. Pursuant to P.U.C. PROC. R. 22.5(b), good cause exists to waive the 20-day requirement of P.U.C. PROC. R. 22.35(b)(2).

III. Ordering Paragraphs

In accordance with these findings of fact and conclusions of law, the Commission issues the following order:

1. TCC's and TNC's requests for approval of their AMS deployment plans and surcharges are granted to the extent that they are consistent with the stipulation.

2. AEP Texas' requests for waivers pursuant to P.U.C. SUBST. R. 25.130(g)(3) are approved.

3. TCC's and TNC's request that they not be required to install advanced meters in advance of the full deployment of advanced meters in a given area, as set forth in AEP Texas's AMS deployment plan that is attached to this Order as Exhibit A, is granted. TCC's and TNC's requests for waiver of the requirements in P.U.C. SUBST. R. 25.130(k)(4) are granted.

4. AEP Texas shall jointly with the other TDUs, hire an independent, third party to conduct security audits of the common AMS web-portal requirements as the development of the common portal continues and shall provide the results of the audits to the Commission.

5. Consistent with the requirements of P.U.C. SUBST. R. 25.130(j)(3), AEP Texas shall have an independent security audit of the mechanism(s) for customer and REP access to meter data conducted within one year of initiating such access and promptly report the results to the Commission. Subsequent annual audits shall be conducted and the results of such audits reported to the Commission.

6. Unless otherwise ordered in a subsequent proceeding, AEP Texas may continue to apply the existing discretionary service charges to customers with poly-phase meters, IDR meters, meters rated above 200 amps, or advanced meters for which AEP Texas has obtained a waiver from the requirement for remote connect/disconnect capability.

7. Entry of this Order does not indicate the Commission's endorsement or approval of any principle or methodology that may underlie the stipulation. Entry of this Order consistent with the stipulation shall not be regarded as a binding holding or precedent as to the appropriateness of any principle that may underlie the stipulation.

8. All motions or requests for entry of specific findings of fact and conclusions of law, other requests for general or specific relief not expressly granted, are denied.

SIGNED AT AUSTIN, TEXAS the 17th day of December 2009.

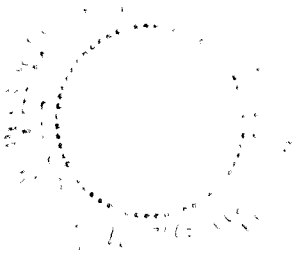
PUBLIC UTILITY COMMISSION OF TEXAS

BARRY T. SMITHERMAN, CHAIRMAN

DONNA L. NELSON, COMMISSIONER

KENNETH W. ANDERSON, JR., COMMISSIONER

q:\cadm\orders\final\36000\36928fo.doc



AEP TEXAS CENTRAL COMPANY'S AND AEP TEXAS NORTH COMPANY'S ADVANCED METERING SYSTEM DEPLOYMENT PLAN

1. **Purpose.** The purpose of this document is to present the AEP Texas Central Company (TCC) and AEP Texas North Company (TNC) plan for deploying an advanced metering system in their respective service areas (AMS Deployment Plan).[1] The information required by P.U.C. SUBST. R. 25.130(d)(4) is contained in this document.

2. **Advanced Meter Technology.** The advanced meter technology that the Companies plan to deploy will provide or support the minimum system features indentified in P.U.C. SUBST. R. 25.130(g)(1) adopted by the Public Utility Commission of Texas (Commission). The specific features of the proposed advanced metering technology are described in the following subsections (a) through (k).

(a) The advanced meters the Companies plan to deploy can be read automatically and remotely.

(b) The advanced meters the Companies plan to deploy will utilize a two-way communication system. The communications technologies that the Companies' plan to use are described in Section 3 below.

(c) The single phase self contained advanced meters to be deployed that are rated at 200 amps or less contain a service switch that can be used to remotely connect or disconnect service via the advanced meters system (AMS) network. The advanced meters to be deployed have the capability of load-side voltage detection, and the service switch will not close if load-side voltage is detected. The service switch also has the capability to open when a configured current limit level is exceeded. The service switch will have the capability to reconnect after a configurable amount of elapsed time.

(d) The Companies' planned AMS has the capability to time-stamp meter data. Periodic meter reading data will be consistent with AEIC guidelines for the American National Standards Institute (ANSI) C12.19 file table standards accepted by the Electric Reliability Council of Texas (ERCOT), and can be time (hour, minute, and second) and date stamped.

(e) The Companies' planned advanced meters have the ability to measure, store display, and report "Out-flow" and "In-flow" energy consumption. In addition, all of the advanced meters to be deployed have the ability to support fixed block or rolling demand intervals for demand measurement and the capability to monitor voltage and report voltage sags or swells. The Companies' planned advanced meters also contain a threshold value (duration) that is programmable for detecting power outages.

---

[1] TCC and TNC are collectively referred to in this AMS Deployment Plan as the "Companies." The Companies are operating utility subsidiaries of the American Electric Power Company, Inc. (AEP) system.

(f) The Companies' proposed advanced meter will have the capability to interact with Home Area Network (HAN) devices inside a customer's premise. The HAN communication device inside the advanced meter will have the capability to communicate with up to five HAN devices in the home for sending pricing signals, supporting demand response, pre-payment options and other communications as specified in the implementation phase of Substantive Rule 25.130.

(g) The residential and non-residential advanced meters to be deployed have the capability of recording multiple channels of consumption data and storing that data in the ANSI C12.19 tables within the advanced meter. The interval length for load profile will be programmable for 1, 5, 15, 30, or 60 minute intervals. Thus, the AMS system to be deployed will have the capability to provide 15-minute or shorter interval data to Retail Electric Providers (REPs), customers and ERCOT on a daily basis, consistent with data availability, transfer and security standards adopted by ERCOT.

(h) The Companies' single phase advanced meters will have load profile storage capability which will provide 269 days of single channel 15 minute interval data storage on board the advanced meter. The three-phase advanced meters will store 219 days of single channel 15 minute interval data storage on board the advanced meter.

(i) The advanced meters the Companies plan to deploy meet the applicable ANSI standards for 0.2 accuracy class meters and will use the ANSI Standard C12.22.

(j) The Companies' planned advanced meters have the capability to interact with home area network (HAN) devices in a customer's premises. The AMS HAN enabling device in the advanced meter has the capability to communicate with up to five HAN devices in the home, provide pricing signals from REPs, and support demand response, pre-payment options, and other communications. The Companies' planned AMS will also transmit interval data to the Companies' web portal on a day-after basis. The timeline for development of the Company's web portal is described in Section 8 below.

(k) The AMS installed by the Companies will have the capability to reconfigure and upgrade the advanced meters over the communication networks, as technology advances, and in the Companies determination, the upgrade becomes economically feasible. The Companies will comply with market notification requirements in P.U.C. SUBST. R. 25.130(g)(5). The Companies' AMS will have the capability to provide firmware upgrades for the HAN communication device in the advanced meter, which will allow changes to be implemented as industry standards are modified or added.

For more information on the associated meter technology, see the Companies' Statement of AMS Functionality, Attachment B to their petition and application.

3. Communication Technologies.

(a) The Companies plan to implement a communications network capable of providing access to all advanced meters within their service areas.

(b) As shown in Figure 1 attached hereto, the planned RF mesh technology will use a 900 MHz communication module in the advanced meter that communicates with a neighboring advanced meter, router or collector (which collects and communicates data from up to 14,000 advanced meters) to create a mesh network. This mesh network has the ability to self heal as the environment changes (e.g., trees grow leaves, another obstruction blocks he preferred communication path or other equipment fails). That is, if an advanced meter on an RF mesh network cannot communicate with a collector along one path in the mesh network, it finds another path in that mesh network through which to communicate with the collector. The advanced meter transmits time-differentiated energy usage to the collection system on a predetermined schedule. That usage data is transmitted on a regular basis through an RF network to a collector point which is often located at a substation. From the collector point the data is transmitted back to the RF operating system through various communication paths including a primary RF mesh network, data quality land lines (copper or fiber), satellite circuits or cellular circuits for incorporation into the Companies' meter data management system (MDMS). Since the RF mesh communication network is a two-way communication system, data can be retrieved from an advanced meter upon request by the back-office operating system. Data or commands can also be sent from the Companies' AMS web portal or back-office systems to the advanced meter via the RF Mesh network. This technology gives the Companies the ability to retrieve all available usage data stored in the advanced meter via the communication network.

(c) AEP will manage the Companies' AMS operating systems within the AEP data center with managed security access to the application at the user level. AEP will use a secure, dedicated communication path to transmit encrypted data to and from the collector to the back-office operating system. Within the RF mesh network, the data communication payload is symmetrically encrypted using the 256-bit Advanced Encryption Standard (AES) algorithm. This encrypted data communications channel is accomplished between the Master Station and all meters. Communications from the Master Station to collectors and Master Station to routers is also encrypted using 256-bit AES encryption. As this is a mesh network, all network-node-to-network-node communications are also encrypted using AES. Although not specifically a security mechanism, the RF mesh network uses what is known as frequency-hopping/spread spectrum technology that reduces susceptibility to attacks on the AMS system. Also, all devices within the RF Mesh network will utilize unique, individual identification, tying that identification to an AEP specified network address. Home Area Network (HAN) security will be accomplished using the security mechanisms as indicated within the ZigBee consortium when they publish their final standard. Currently, this includes the 256-bit AES algorithm for data communications encryption. AEP is proactively working with the vendor community and various security organizations to ensure cyber security requirements are met as threats develop and vulnerabilities are discovered on an ongoing basis. As the vendors finalize their security roadmaps, AEP expects to implement more robust security features and technologies.

(d) AMS Network Technical Capabilities. Specific technical capabilities and limitations of the RF mesh communications network are listed below.

(i) The 2-way communications RF Mesh network includes three main components:

(A) AMS Meters (with appropriate RF mesh network interface components), with capability to participate in the node to node routing of network traffic.

(B) Routers (repeaters) - network devices whose purpose is to move data rapidly across long distances and to increase the effective utilization rate of the network between the AMS Meters and the aggregation/backhaul points. Routers (repeaters) also act as network packet buffers between the AMS Meters and the aggregation points by providing message consolidation capabilities. These devices are typically mounted on light poles, power poles, or other structures at a typical height of 25 to 45 feet above ground level.

(C) Aggregation/backhaul points - network devices that serve as the interface between the AMS RF Mesh network and the IP network that connects across the Backhaul network from the aggregation point to the AMS Master Station. These devices are typically mounted on poles, or other structures at a typical height of 45 feet or higher above ground level. Aggregation points are fed periodically by data from routers (repeaters) and AMS Meters. For outgoing messages that originate from the AMS Master Station to the AMS Meters these messages are dispatched using definitions of outbound links based on last known good incoming links to the aggregation point points. The actual outbound routing is initially defined during auto–registration of the AMS Meters and periodically updated via routine communications.

(ii) Self Healing and Dynamic Routing – redirection of message traffic occurs automatically between the AMS network nodes upon detection of a failed node or a better RF Mesh network route path.

(iii) Auto–registration – AMS Meters automatically self–discover and self register on the network.

(iv) Bandwidth and Scalability – packet–switching, asynchronous, multi–channel (240 in all) capability allows for data through put far and above the raw speed of the RF Mesh node radios. The raw radio speeds are 9,600 bps between the AMS Meters and either routers (repeaters) or aggregation points, and 19,200 bps between routers (repeaters) and the aggregation points.

(v) Flexibility – configuration and firmware downloads can be issued remotely to all endpoints and infrastructure elements of the system.

(vi) Priority Messaging – AMS network allows user–configurable messaging priority to manage data traffic delivery.

(vii) Variable AMS Network node RF radio power - AMS network node RF radios output power can be adjusted as necessary to address efficient operation across the

service territory: AMS Meters from 50 milliwatts to 425 milliwatts; routers(repeaters) and aggregation points from 100 milliwatts to 1 watt.

(ix) Backhaul Network Technical Requirements.

(A) Provides an IP network between the aggregation point and the AEP Data Center.

(B) Network traffic is secured using a SSL protocol session encryption between the aggregation points and the AMS Master Station.

(C) Backhaul network connection sized for minimum 56 kbps data rate will use a mix of backhaul network design approaches that best satisfy the: network traffic needs; network availability (public or private) in the Companies' service territories; and acceptable cost points.

(D) AMS Network through-put requirements are typically addressed by the changing the deployed quantity of aggregation/backhaul points (along with the required backhaul network connections).

(e) The Companies are evaluating other technologies that may be a better solution for areas with long distances between advanced meters, such as the sparsely populated areas of west Texas and the rural parts of the Companies' service areas; however, for purposes of this AMS Deployment Plan filing the Companies have designed and priced a RF mesh system that will serve the Companies entire service areas. The Companies will continue to monitor advanced meter technology as it evolves and evaluate any new developments for application in their AMS. Should the Companies determine that a new technology should be implemented in conjunction with (or instead of) RF mesh as part of their AMS, The Companies' will file an amendment to their AMS Deployment Plan as required by P.U.C. SUBST. R. 25.130 (d)(10).

4. Systems Developed During the Deployment Period.

(a) As mentioned previously, the metering technology described in Sections 2 and 3 requires communication networks that will need to be installed or acquired in connection with the AMS deployment. The communication networks include the collector systems discussed previously. Each communication network also has its own head-end software system located in the Companies' back office that supports the two-way data flow between the advanced meters and the other information technology (IT) infrastructure systems. These systems perform several functions, such as produce schedules for reading, connecting and disconnecting meters, and performing the on-demand reads. These systems monitor the operations of the associated communication networks to determine whether the network is operating properly.

(b) The Companies' existing IT systems will also require upgrades or modifications. For example, the MDMS currently stores and processes the data from the communication networks. Additionally, the MDMS also evaluates the meter data received and performs validation, editing, and

estimation (VEE) of the interval readings, if needed. AEP fully expects to have to upgrade and or modify the existing system in order to support a full AMS deployment.

(c) Another system required to support the AMS deployment is the implementation of a data warehouse to support the accumulation of large meter data volumes for long-term storage for internal support processes. Also, interfacing with the data warehouse will be other AEP IT systems that provide or require metering data. For example, two of these systems are the Metering Data System ("MDS") that stores meter asset information and the Customer Information System ("CIS") that stores customer related information like billing data and premise numbers.

(d) With the addition of new IT systems, various integrations with other existing systems will be needed. The Companies expect these to be developed as web services. The web services are required to "push" or "pull" the data from one system in a particular format to another system in possibly another format and communicate information in a standard format between systems in support of advanced meter functions(reconnect, disconnects, pings) and HAN transactions. Also, as noted, due to the changes in quantity of data, AEP will have to modify or upgrade some of its existing legacy systems, such as CIS.

5. Timeline for Web Portal Development.

AEP is working with other Transmission and Distribution Service Providers (TDSPs) in ERCOT to implement a common AMS web portal under development in Project No. 34610. The project is currently in the development phase. It is expected the development of the common web portal will be completed prior to the Companies' full deployment in the Spring of 2010. In the event the common web portal is not available for the Companies' initial AMS deployment, AEP will provide alternate methods of delivery for the AMS data, which will include access to the data from AEP's secure web site or other secure web interfaces.

6. Deployment Schedule by Specific Area (geographic information).

(a) The first step of the AMS Deployment Plan is the installation of approximately 5,000 meters using RF mesh network communication in the City of Portland. The initial deployment will utilize fully functional meters in order to provide the opportunity to identify and resolve any problems or issues with hardware, software, or processes before beginning full-scale commercial deployment. This process will ensure that the AMS systems at TCC and TNC provide all the benefits and improved functionality to end use customers and REPs specified in the Commission's rule. Full-scale commercial deployment of AMS will then commence in the second quarter 2010 for TCC in the City of Corpus Christi and the second quarter of 2010 for TNC in the City of Abilene. After completion of the initial full deployment in Corpus Christi and of Abilene in 2010, the Companies plan to continue full deployment of the RF meters in a sequence that will enable them to eliminate manual readings in an entire meter reading area.

(b) TCC plans to install 5,000 meters in 2009, approximately 131,000 meters in 2010, and an average of 224,000 meters annually in 2011, 2012 and 2013. TNC plans to install approximately

57,000 meters in 2010, and an average of approximately 45,000 meters annually in 2011, 2012 and 2013.

(c) Figure 2 provides a detailed listing of the areas and the quarters in which the Companies' plan to deploy the proposed AMS. It may become necessary to revise this schedule and sequence over the course of the deployment of AMS due to changing circumstances. Should that be the case, The Companies' will report on any changes to this proposed schedule and sequence in its monthly progress reports that will be filed pursuant to P.U.C. SUBST. R 25.130(d)(9).

7. **Reports.**

(a) Commencing with the approval of this AMS Deployment Plan by the Commission, a monthly status report meeting the requirements of P.U.C. SUBST. R. 25.130(d)(9) will be filed with the Commission within 15 days of the end of the month to which it applies during the AMS deployment period. The Companies will notify all certified REPs of the availability of the report through the standard market notice requirements. The monthly progress report will include the number of advance meters installed by ESI ID, variations in the AMS Deployment Plan, significant problems the Companies' have experienced, the number of advanced meters replaced as a result of the AMS problems, and any status of AMS feature Deployment.

(b) Upon request by a REP, TCC and TNC will provide a report to the requesting REP stating the estimated cost and schedule for providing a non-standard advanced meter or non-standard advanced meter feature.

(c) The Companies will, jointly with other TSDPs involved in developing the common portal, hire an independent, third party to conduct a security audit of the common AMS web portal requirements as the development of the common web portal begins and will provide the results of that audit to the Commission in a compliance filing for the reporting. Additionally, the Companies will individually, with in a year after initially providing commercial AMS service, engage an independent security auditor to conduct an audit of the Companies' mechanisms for customer and/or REP access to meter data consistent with P.U.C. Subst. R. 25.130(j)(3).

(d) The Companies will provide annual reports to the Commission, which shall include actual costs spent to date in deploying the AMS, the actual net operation cost savings, and the variances from projections, to determine the surcharges authorized by the Commission. The first such report will be filed by December 1, 2010 and cover the period through September 2010, the end of the first year of the deployment and in which the surcharges have been in effect.

8. **Schedule for Deployment of Web Portal Functionalities.** As mentioned previously, the Companies plan to deploy and test a fully functional system beginning with the initial deployment in October 2009. Until the functionalities associated with the common Web Portal under development in Project No. 34610 are available, AEP will provide alternate methods of delivery for the AMS data, which will include access to the data from AEP's secure web site or other secure web interfaces.

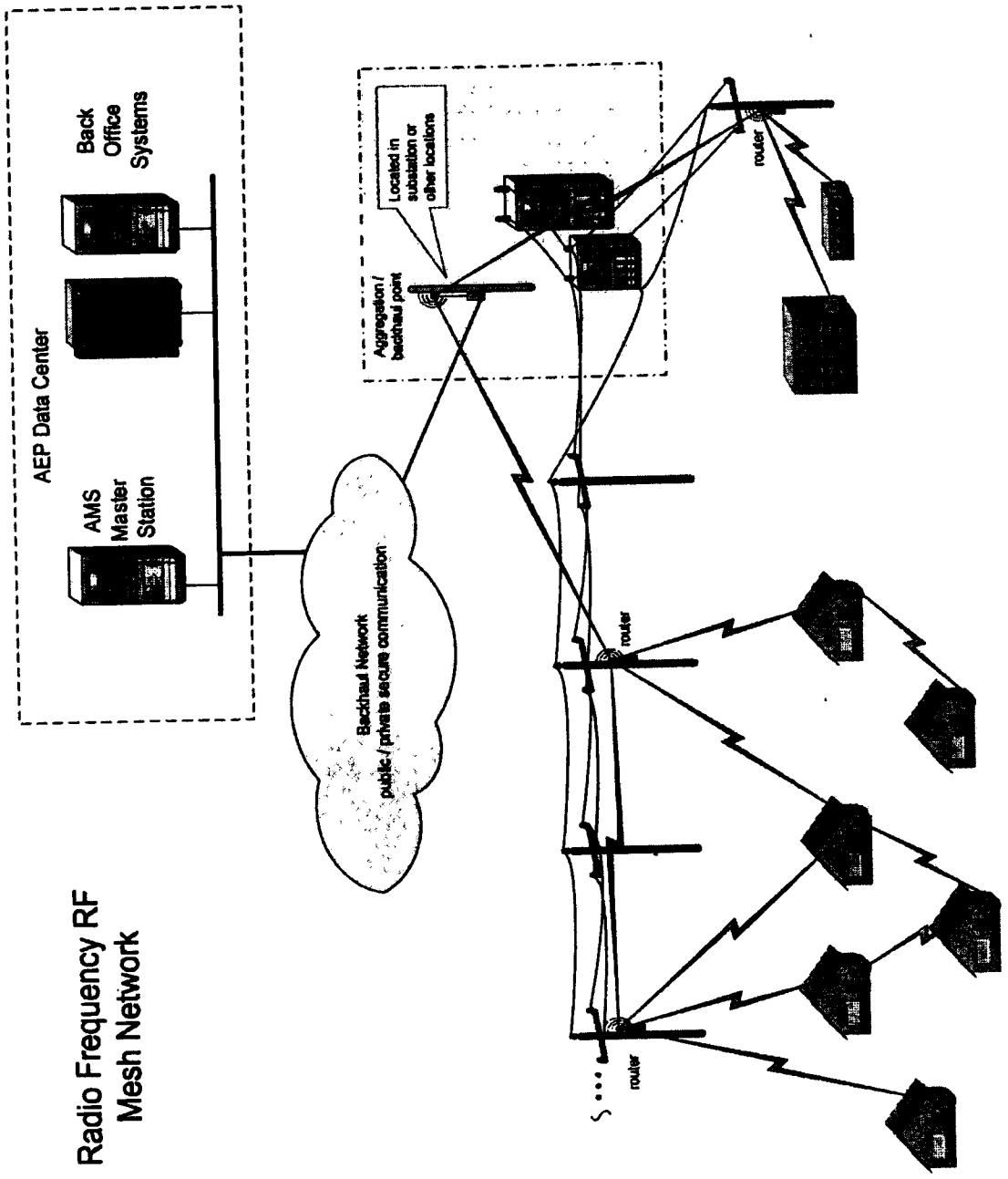

AEP Data Center
Back Office Systems
AMS Master Station
Backhaul Network
public / private secure communication
Aggregation / backhaul point
Located in substation or other locations
router
router
router
Radio Frequency RF Mesh Network

FIGURE 1

EXHIBIT A

FIGURE 2

	Portland	Corpus Christi	Aransas Pass	Alice	Brownsville	Carrizo Springs	Del Rio	Eagle Pass	Kingsville	Port Isabel	Port Lavaca	Sinton	Uvalde(urban)	Victoria	Edinburg	Harlingen	McAllen	Pharr	Rio Grande City
Qtr 4	5000																		
2009 Total																			
Qtr 1																			
Qtr 2		32795																	
Qtr 3		49193																	
Qtr 4		49193																	
2010 Total																			
Qtr 1			40308																
Qtr 2				17148	8820	8468	20601												
Qtr 3								18753	12849	22195									
Qtr 4											8452	6513	8000	29646					
2011 Total																			
Qtr 1															23450	53671			
Qtr 2																	49124		
Qtr 3																		29499	20272
Qtr 4																			
2012 Total																			
Qtr 1																			
Qtr 2																			
Qtr 3																			
Qtr 4																			
2013 Total																			
Totals	**5000**	**131181**	**40308**	**17148**	**8820**	**8468**	**20601**	**18753**	**12849**	**22195**	**8452**	**6513**	**8000**	**29646**	**23450**	**53671**	**49124**	**29499**	**20272**

FIGURE 2 Cont.

	Wallaco	Bay City	Beeville	Edna	El Campo	Fairfield	Freer	Hebbronville	Laredo	KyMission	Kames City Kenedy	Pearsall	Pleasanton	Refugio	Sinton(rural)	Uvalde	Yorktown-Luling	Zapata
Qtr 4																		
2009 Total																		
Qtr 1																		
Qtr 2																		
Qtr 3																		
Qtr 4																		
2010 Total																		
Qtr 1																		
Qtr 2																		
Qtr 3																		
Qtr 4																		
2011 Total																		
Qtr 1																		
Qtr 2																		
Qtr 3																		
Qtr 4	47216																	
2012 Total																		
Qtr 1		16733	12289	4350	11182	8043	2808	4549										
Qtr 2									81408									
Qtr 3										4641	53897							
Qtr 4												11588	9661	6595	4000	5482	5000	6001
2013 Total																		
Totals	**47216**	**16733**	**12289**	**4350**	**11182**	**8043**	**2808**	**4549**	**81408**	**4641**	**53897**	**11588**	**9661**	**6595**	**4000**	**5482**	**5000**	**6001**

FIGURE 2 Cont.

TNC Deployment Plan by Sub Area

	Abilene	San Angelo	Eden-Sonora	Childress	Clyde	Cross Plains	Hamlin	Munday	Quitiqua	Stamford	Vernon	Ballinger	Marfa-Alpine	McCamey
Qtr 4														
2009 Total														
Qtr 1														
Qtr 2	5000													
Qtr 3	26016													
Qtr 4	26015													
2010 Total														
Qtr 1		12455												
Qtr 2		12455												
Qtr 3		12454												
Qtr 4		12454												
2011 Total														
Qtr 1			8111	2995										
Qtr 2					5882	9755								
Qtr 3							4269	2865	3852					
Qtr 4										7488	9857			
2012 Total														
Qtr 1												9134		
Qtr 2													12659	
Qtr 3														9283
Qtr 4														
2013 Total														
Totals	57031	49818	8111	2995	5882	9755	4269	2865	3852	7488	9857	9134	12659	9283

AEP TEXAS CENTRAL COMPANY'S AND AEP TEXAS NORTH COMPANY'S STATEMENT OF AMS FUNCTIONALITY

- Purpose. The purpose of this document is to present AEP Texas Central Company's and AEP Texas North Company's (AEP Texas or Companies) Statement of AMS Functionality. The information required by P.U.C. SUBST. R. 25.130(d)(3) is contained in this document.

- Technological requirements. The advanced meter system described in the Companies' AMS Deployment Plan submitted to the Commission as Exhibit A meets the requirements specified in P.U.C. SUBST. R. 25.130(g) with the exceptions noted below.

- Service Area Variances between Technology and Meter Functions. The Companies' plan to use Radio Frequency Mesh Network (RF Mesh) communication technologies in its deployment of advanced meters throughout the Companies' service areas but reserves the right to deploy alternative technologies in areas where customer density is very low, making it cost prohibitive to extend RF Mesh technology to those areas. Creating the needed communication network across the Companies' large and varied service territories in the most cost-effective manner may require the use of multiple technologies.

- Request for Waivers. The Companies request waivers to relieve AEP Texas of the obligation of installing an advanced meter that would have all of the functionalities contemplated by P.U.C. SUBST. R. 25.130 in the following circumstances.

A. An advanced meter with disconnect functionality will not be required for loads registered as Critical Loads under the Commission's rules and loads that may cause safety or health issues if disconnected, such as traffic lights, railroad crossings, police stations, hospital facilities, service points providing cathodic protection, and AEP Texas emergency facilities.

B. An advanced meter with HAN capability will not be required for loads that do not require and will never require a HAN device such as traffic lights, metered streetlights, electric gates, communication power supplies, sprinkler controls, and cathodic protection power supplies.

C. Loads that currently have poly-phase, class 200 (200 amp rating) meters, which includes commercial customers and some residential customers, will not have a service switch until a poly-phase meter with those devices becomes available in the market.

D. Loads that have poly-phase and instrument rated meters will not have a HAN device until those meters with HAN devices become available in the market.

E. Companies not be required to install advanced meters under the circumstances set forth in P.U.C. Subst. R. 25.130(g)(6), in advance of the full deployment of advanced meters in a given area.

F. The Companies seek any and all waivers required from P.U.C. SUBST. R. 25.130(g)(1)(E)(i) and (G) if and only to the extent those rules require real-time access to data for end-use customers. End-use customers, however, will not have access to data through a web portal unless and until (A) provided by their REP, or (B) the Texas common data repository (hereinafter, Common Repository) and Texas common web portal (hereinafter, Common Portal)

are in place pursuant to the *Implementation Project Relating to Advanced Metering,* Project No. 34610. Once the Common Portal is completed, customers (in addition to REPs and authorized third parties) will have secure access to data through the Common Portal.

- Table of Functionality. The following table describes how the Companies' AMS meets each of the minimum system features set forth in P.U.C. SUBST. R. 25.130(g)(1).

TABLE-OF FUNCTIONALITY
MINIMUM SYSTEM FEATURES

Rule	Requirement	AEP Texas Implementation
(A)	Automated or remote meter reading;	• AEP Texas will gather 15 minute interval data scheduled periodically each day from AMS meters. • AEP Texas will provide a register reading time stamped at 23:59:59 (hh:mm:ss) for each meter. • All collected reading data will be made available no later than day after. • AEP Texas' meter data gathering process will include a scheduled demand reset of polyphase meters.
(B)	Two-way communications;	• AEP Texas will provide two-way communications between the Common Portal and AMS meter. • AEP Texas will support REP and consumer ability to directly "ping" or "poll" meters as defined by the PUCT AMIT workshops, Project No. 34610. Please see Section (E), below. • AEP Texas AMS meters will support two-way communications between the AMS meter and ZigBee Smart Energy 1.0 HAN devices that have been certified by the ZigBee Alliance as a ZigBee Compliant Platform. **Constraints:** • AEP Texas' AMS does not support at this time, unsolicited messages from HAN devices that are not covered by the ZigBee Alliance SmartEnergy protocols, such as, low battery or other device operating status messages. SmartEnergy profile messages from a provisioned HAN device, such as customer load event opt-out notices, are supported. • AEP Texas seeks any and all waivers required from P.U.C. SUBST. R. 25.130(g)(1)(E)(i) and (G) if and only to the extent those rules require real-time access to data for end-use customers. End-use customers, however, will not have access to data through a web portal unless and until (A) provided by their REP, or (B) the Common Repository and Common Portal are in place pursuant to the *Implementation Project Relating to Advanced Metering,* Project No. 34610. Once the Common Portal is completed, customers (in addition to REPs and authorized

		third parties) will have secure access to data through the Common Portal.
(C)	Remote disconnection and reconnection for meters rated at or below 200 amps;	• AEP Texas will deploy advanced meters rated at 200 amps or less that contain a service switch capable of remotely connecting or disconnecting service via the AMS network.
(D)	The capability to time-stamp meter data sent to the independent organization or regional transmission organization ("RTO") for purposes of wholesale settlement, consistent with time tolerance standards adopted by the independent organization or RTO;	• AEP Texas' proposed AMS has the capability to time-stamp meter data. Periodic meter reading data is consistent with the American National Standards Institute (ANSI) C12.19 file table standards accepted by ERCOT, and can be time (hour, minute, and second) and date stamped.
(E)	The capability to provide direct, real-time access to customer usage data to the customers and the customer's REP, provided that: i. Hourly data shall be transmitted to the electric utility's web portal on a day-after basis. ii. The Commission Staff using a stakeholder process, as soon as practical shall determine, subject to Commission approval, when and how 15-minute interval recorder data shall be made available on the electric utility's web portal;	• AEP Texas' AMS System will be able to support 15-minute settlement at ERCOT provided (a) the settlement requirements do not exceed those developed in Project No. 34610 and (b) settlement at ERCOT, prior to the deployment of the Common Repository, follows the interim market schedule for settlement agreed to by the ERCOT Market Advanced Readings and Settlements Task. • Until the Common Repository and Common Portal are available, AEP Texas will make meter usage interval data and midnight meter register reads available to REPs using "File Transfer Protocol (FTP)" files on the AEP-hosted secure site. **Constraints:** • End-use customers will not have access to data through a web portal unless and until (A) provided by their REP, or (B) the Common Repository and Common Portal are in place pursuant to Project No. 34610. • Functionality beyond what is contained in the AMIT requirements and future direction such as real time switching or move-ins is out of scope. **Explicitly excluded functionality:** • Move in Request • Non -Midnight move-ins • Two move-ins in the same 24-hour period • Real -time move in • Cu stomer selected time of move-in • Switch Request • Non -Midnight switch • Multiple s witches in the same 24-hour period • Real -time switching

		• Accelerated f irst available switch date • Cu stomer selected time of switch • Disconnect For Non-Pay • Time -specific disconnect • Real -time disconnect • Real -time reconnect after DNP • Time -specific reconnect • Cancels *I* Date Changes • Time -specific time changes • Real -time cancels • Move out • Time-specific move out
(F)	Means by which the REP can provide price signals to the customer;	• AEP Texas will enable REP price signals over the AMS communications network to ZigBee Smart Energy 1.0 in-home HAN devices that have been certified as a ZigBee Compliant Platform by the April, 2010.
(G)	The capability to provide 15-minute or shorter interval data to REPs, customers, and the independent organization or RTO, on a daily basis, consistent with data availability, transfer and security standards adopted by the independent organization or RTO;	• AEP Texas is working with other Transmission and Distribution Service Providers (TDSPs) to implement an envisioned Common Repository and Common Portal pursuant to the *Implementation Project Relating to Advanced Metering,* Project No. 34610. The project is currently in the development phase. As part of this development phase, AEP Texas is analyzing its existing systems and is identifying necessary upgrades to its infrastructure that will be needed as part of the implementation of the Common Portal. • Starting no later than April, 2010, and during the interim period until the Common Repository and Common Portal are available, should they not be available as currently planned in the first quarter of 2010; AEP Texas will provide or support the following. • AEP Texas will provide REPs with available 15-minute VEE meter usage data on a daily (no later than day-after) basis using "File Transfer Protocol (FTP)" files on the AEP-hosted secure site. • AEP Texas will provide daily (no later than day-after) available meter register reads using "File Transfer Protocol (FTP)" files on the AEP-hosted secure site. • AEP Texas will forward such data directly to ERCOT per the Market Advanced Readings and Settlement (MARS) subcommittee guidance and schedule. **Limitation:** • End-use customers will not have access to unless and until (A) provided by their REP, or (B) the Common Repository and Common Portal are in place pursuant to Project No. 34610.
(H)	On-board meter storage of meter data that complies with nationally	• The on-board meter storage feature of the AEP Texas advanced meter will be C 12.19 compliant consistent

	recognized non-proprietary standards such as in American National Standards Institute (ANSI) C12.19;	with AEIC guidelines for C12.19.
(I)	Open standards and protocols that comply with nationally recognized non-proprietary standards such as in ANSI C12.22, including future revisions thereto;	• The AEP Texas AMS will be C12.22 compliant by December, 2010.

(J)	Capability to communicate with devices inside the premises, including, but not limited to, usage monitoring devices, load control devices, and prepayment systems through a home area network, based on open standards and protocols that comply with nationally recognized non-proprietary standards such as ZigBee, HomePlug or the equivalent; and	• AEP Texas proposed AMS supports communication with ZigBee Smart Energy 1.0 enabled in-home devices that have been certified as a ZigBee Compliant PlatformAEP Texas is an active member in the UCA OpenSG organization and was one of the leading contributors within one of its task forces, UtilityAMI, that produced the OpenHAN SRS document. AEP Texas is also a member of the ZigBee + HomePlug (ZBHP) Alliance Organization that is in the process of crafting future Smart Energy functions. Within this organization, AEP Texas is actively participating in both the Marketing and Technical working groups and is leading the Conformance working group that will be setting compliance standards for the new Smart Energy 2.0 compliant technologies. • AEP Texas will support the following HAN functionality by April, 2010. • AEP Texas can s upport up to 5 provisioned HAN devices. • AEP Texas can support REP-to-HAN pre-nodal use projections as proposed in PUCT Project No. 34610) by April, 2010 with limitations: o REPs use multicast (broadcasting) messaging for time-of-use price messaging; o HAN device message receipt acknowledgement messages are gathered and returned to REP during normal data gathering processes. **Constraints:** • PUCT Project No. 34610 HAN business and technical requirements are still in development. Several HAN requirements, as listed below, have been proposed that are not covered in AEP Texas' AMS filing. AEP Texas will incorporate, to the extent the means to provide such functionality are commercially available, all the HAN business, technical, and timing requirements as set forth in PUCT Project No. 34610. In the event the means to resolve such constraints or provide such functionality are not commercially available, AEP Texas will use reasonable efforts to develop or encourage the development of such means.

(J) Cont.		• HAN functionality not covered in AEP Texas' filing include: • Signal repeaters or range extenders between AMS meters and provisioned HAN devices; • Detailed monthly HAN communication and operational activity reporting; • Extensive real time two-way communication sessions between REPs and provisioned HAN devices, including unsolicited messaging initiated by HAN devices to the REP; • AMS bandwidth monitoring sufficient to report in near real time bandwidth availability throughout the AMS communications network; • HAN message queue monitoring and status reporting for REPs; • AEP Texas support for near real time messaging to REPs from provisioned HAN devices; and • AEP Texas' ability to move HAN provisioning information from one meter to another meter when replacing meters. • AEP Texas' AMS per this filing is limited in how it can support two-way communications between REPs and HAN devices. AEP Texas will support two way REP-to-HAN communications as follows: • HA N device provisioning confirmation messages by 3rd Quarter 2010; • Notificatio n when customer "opts out" of a load control event initiated by a REP April, 2010; • Notification a meter fails to deliver a REP message to a provisioned HAN device by April, 2010.
(K)	The ability to upgrade these minimum capabilities as technology advances and, in the electric utility's determination, become economically feasible.	• AEP Texas meters and communications modules can be remotely upgraded with firmware or configuration changes.

Exhibit C

Estimated AMS Deployment and Maintenance Costs[1]
2009-2020
($ millions)

Description	TCC		TNC		TOTAL AEP TX		
	O&M	CAPEX	O&M	CAPEX	O&M	CAPEX	TOTAL
Meters (including meter hardware, project field coordination and installation costs)		$158.44		$40.66	$0.00	$199.10	$199.10
Communications Systems (including routers, collectors, subscription services and installation and maintenance costs)	$8.07	$26.48	$5.04	$10.55	$13.11	$37.03	$50.14
New Systems and IT Infrastructure (including AMS head-in system, meter data management, operations support and project management)	$44.95	$18.62	$11.14	$4.62	$56.09	$23.24	$79.33
WebPortal	$10.45	$2.14	$2.61	$0.53	$13.06	$2.67	$15.73
ERCOT 15-Minute Settlement	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
New Market Functionality	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Project Management		$2.72		$0.64	$0.00	$3.36	$3.36
Customer Education	$3.05	$0.95	$0.78	$0.24	$3.83	$1.19	$5.02
Low Income In-Home Monitors	$0.80		$0.20		$1.00		$1.00
AMS Consultant		$0.28		$0.02	$0.00	$0.30	$0.30
AMIT Workshop Facilitation	$0.20	$0.07	$0.05	$0.02	$0.25	$0.09	$0.34
Employee Severances		$0.91		$0.40	0	$1.31	$1.31
Other project expenses (project 34610 travel, vendor evaluation and contract negotiation expenses)		$0.70		$0.22	$0.00	$0.92	$0.92
Additional Staffing	$56.75		$15.68		$72.43	$0.00	$72.43
Rate Case Expenses	$0.00	$0.40	$0.00	$0.10	$0.00	$0.50	$0.50
Total Costs	$124.27	$211.71	$35.50	$58.00	$159.77	$269.71	$429.48

(1) Costs include taxes and overheads and have been adjusted for escalation factors.